

A STUDY OF
SUBJECT MATTER INFORMATION IN HOME ECONOMICS
WITH A NUMBER OF GROUPS OF HIGH SCHOOL AND COLLEGE PUPILS

by

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INTRODUCTION

Home economics teachers have for some time recognized that girls in their classes are already in possession of some facts and information regarding home economics. Just how much of this subject matter is actually earned by the girls in the classroom has been a frequent topic of discussion among home economics teachers and supervisors. That the teacher generally assumes that the pupil has no knowledge of home economics subject matter and plans her class work in respect to this is a matter of concern to many home economists. This practice too often results in a lack of interest, waste of time, and inadequate tie up with the mother and home.

Home economics teachers in secondary schools have recently been giving much consideration and time to studying the home interests and activities of the girls as a basis for planning their courses. No attempt has been made, however, to ascertain what the girls already know prior to taking the classroom work or to place any evaluation upon what the home may have taught them. Bobbitt* says, "All education should proceed upon the assumption that nothing should be done by

* Bobbitt, Franklin P. How to Make a Curriculum.

the school that can be sufficiently well accomplished through the normal process of living." Although home economics teachers may not concede this without some reservations or exceptions, it is important that they check their courses with this principle of curriculum making.

In order that girls may be adequately trained for home making responsibilities, there is a vast amount of home economics subject matter to be mastered. Surely, then, home economics teachers are not justified in teaching subject matter that girls already know.

This study was made to learn what information in home economics girls have who have had no such work in school and to evaluate and use the findings in planning and teaching home economics in high schools.

METHOD AND PROCEDURE

This study is based entirely upon information in home economics and includes no checking of skills and techniques.

The methods used were as follows:

1. An information test containing five types of objective tests was used for securing the data. True and false, completion, multiple answer, alternate choice, and matching were the types used.

2. The test was based upon work as outlined in the Kansas two year home economics course of study for high

schools, which includes foods, clothing, home management and family relationships, health and home care of the sick, and child care. It was the type of final examination one might expect girls to pass who had had the two year course.

3. The test was prepared and checked with the state course of study, state scholarship tests, and a number of final examinations over this material. It was then checked by a number of high school home economics teachers and by members of the department of education of the Kansas State Agricultural College. The test was first given as a try out to fifty high school girls; corrections and changes were made according to the needs indicated by the results.

4. A personal interview was had with a number of teachers to whom the details were fully explained. The teachers who were interested and willing to cooperate gave the tests to high school girls in the following types of schools: consolidated, rural high, junior high, senior high, and college.

5. The tests were given to seventh, eighth, ninth, tenth, eleventh, and twelfth grade girls and to college freshmen who had had no home economics in school. The test was also given to twenty high school girls who had had the two year course in home economics. This group was used as a control group in studying the results. No attempt was made in any case to have girls take the test who had had any special type of scholarship record or I.Q. Girls were taken

as a regular class.

6. Completely checked tests that were obtained for securing the data numbered as follows: seventh grade, 31; eighth grade, 22; ninth grade, 181; tenth grade, 42; eleventh grade, 24; twelfth grade, 22; college freshmen, 20; girls who had had home economics, 20.

7. The tests were marked and scored and the results organized into tables.

8. The tables were analyzed and the findings listed.

9. Conclusions were based on the findings and results.

TABULATIONS AND RESULTS

Detailed Tables of Type Tests According to Grade

Table I. Grade 7.

Age	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
12	1	41	8	4	19	6	4
10	1	67	20	6	40	1	0
12	1	67	21	4	22	14	6
13	1	69	21	6	23	15	4
13	1	70	23	5	26	11	5
13	1	80	21	6	46	17	7
11	1	80	16	6	33	15	10
11	1	81	18	4	32	15	12
12	1	85	24	6	25	18	12
11	1	86	26	7	26	19	8
12	1	87	27	9	21	16	14
12	1	93	23	4	35	22	9
11	1	94	28	9	30	15	13
11	1	97	25	4	33	19	16
12	1	101	23	7	34	14	13
11	1	102	27	10	39	12	14
10	1	105	24	17	35	16	13
13	1	107	21	11	39	24	12
12	1	108	29	13	41	12	13
13	1	109	24	15	43	15	12
13	1	109	25	14	32	20	18
12	1	112	17	12	44	22	17
12	1	114	25	17	36	20	16
12	1	118	23	16	46	17	16
12	1	119	24	10	51	16	18
11	1	120	29	6	45	24	16
12	1	122	23	10	51	21	17
12	1	124	31	7	51	22	13
12	1	126	24	13	53	18	18
12	1	131	23	19	48	25	16
12	1	138	28	22	49	18	21
Totals	31	3072	721	265	1120	499	383
Possible scores		223	40	53	70	34	26
Average		99.09	23.2	6.7	37.08	16.09	12.3
Median		101	23	7	36	17	13
Low		41	8	4	19	1	0
High		138	29	19	53	25	21

It is interesting to note in the above table a variance of four years with the lowest and highest total scores made by a girl twelve years old. The average median for total score was seven points below one half the possible total score.

Table II. Grade 8.

Age	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
15	1	44	17	9	16	2	0
14	1	61	22	2	31	6	0
14	1	74	21	11	22	16	4
15	1	80	24	7	27	18	4
14	1	86	29	13	20	19	5
15	1	88	30	13	20	18	7
12	1	87	25	8	32	14	8
13	1	90	24	8	48	10	0
15	1	98	23	12	41	22	0
14	1	99	32	9	32	17	9
14	1	99	23	9	28	24	15
12	1	99	25	14	27	15	18
12	1	102	26	6	42	17	11
12	1	104	28	23	22	18	13
13	1	106	28	17	35	23	3
14	1	108	28	19	41	18	2
12	1	109	30	13	38	14	14
14	1	112	29	14	36	13	20
13	1	115	24	9	47	16	19
13	1	116	24	15	42	17	18
13	1	121	32	8	42	19	20
12	1	125	30	17	40	20	18
Totals	22	2123	574	256	729	356	208
Possible scores		223	40	53	70	34	26
Average		96.5	26	11.6	33.1	16.1	9
Median		99	27	12	33	18	7
Low		44	17	2	16	2	0
High		125	32	19	48	24	20

A variance of four years with low score being made by a girl fifteen years old and high score by a girl twelve years old.

The median for total score was the same as that of the seventh grade.

Table III. Grade 9.

Age	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
14	1	54	20	0	22	8	4
13	1	50	10	1	28	11	0
14	1	54	17	6	4	17	10
14	1	58	27	1	12	15	3
14	1	59	14	6	20	10	9
13	1	62	12	7	17	12	14
15	1	62	20	9	21	12	0
14	1	65	15	15	18	11	6
15	1	66	12	11	22	13	8
14	1	68	25	8	35	0	0
16	1	69	28	5	34	18	2
14	1	70	28	9	24	9	0
14	1	71	15	10	17	15	14
15	1	75	18	3	34	9	11
15	1	77	26	9	20	12	10
14	1	80	19	14	22	13	12
15	1	82	27	7	17	14	17
14	1	83	20	40	40	13	6
14	1	84	31	8	21	18	6
14	1	85	27	20	15	18	5
16	1	86	29	17	40	0	0
14	1	87	17	4	40	12	14
14	1	87	27	9	19	19	13
14	1	87	23	11	23	17	13
16	1	88	31	9	21	15	12
13	1	88	19	17	45	7	0
15	1	89	25	6	34	15	9
15	1	89	27	12	19	19	12
14	1	89	27	7	24	20	11
13	1	89	21	5	39	11	13
14	1	91	25	12	21	18	15
16	1	92	25	11	32	18	6
18	1	92	20	9	37	17	9
14	1	92	25	9	21	73	14
13	1	93	26	11	29	16	11
14	1	94	28	11	52	3	0
15	1	94	29	7	44	19	15
16	1	94	24	8	28	18	17
14	1	94	31	8	21	18	13
18	1	94	26	5	37	17	9
12	1	94	23	10	36	18	8

Table III. Continued.

13	1	95	27	12	19	19	18
15	1	96	14	6	39	19	18
14	1	97	21	13	35	17	11
14	1	97	28	13	27	18	11
14	1	97	27	4	48	14	4
15	1	97	22	11	26	22	16
13	1	99	28	11	41	12	7
13	1	99	12	12	39	25	11
15	1	99	24	11	22	15	17
14	1	99	27	21	44	7	0
16	1	99	27	12	32	17	11
15	1	100	23	8	41	17	11
16	1	100	26	18	21	18	17
14	1	101	29	18	24	18	12
16	1	101	29	6	37	19	10
15	1	101	24	9	39	18	11
13	1	101	26	5	40	20	10
15	1	101	16	14	55	16	0
13	1	102	28	14	24	19	17
16	1	102	29	11	28	21	14
14	1	102	25	11	26	20	20
14	1	103	26	11	41	11	14
13	1	103	25	10	45	17	6
15	1	103	27	13	34	15	14
15	1	103	24	14	46	13	6
15	1	104	30	7	47	20	0
14	1	104	30	11	31	19	13
15	1	105	25	6	40	18	16
15	1	106	28	11	43	9	15
16	1	106	27	8	45	21	5
14	1	106	25	18	30	14	19
14	1	107	28	9	39	21	10
15	1	107	27	12	27	17	24
14	1	107	29	13	30	20	15
15	1	107	25	20	21	21	20
16	1	108	24	9	49	16	10
14	1	108	23	6	44	22	13
14	1	109	16	13	47	14	19
13	1	109	27	14	32	24	12
13	1	109	24	16	36	23	20
14	1	109	24	11	36	22	16
14	1	109	20	21	41	22	15
13	1	109	29	5	38	19	18
14	1	110	23	13	27	26	21
14	1	111	27	4	43	18	19
14	1	111	26	13	49	11	12

Table III. Continued.

14	1	112	17	17	50	17	11
14	1	113	27	10	35	26	15
13	1	114	26	12	40	18	18
15	1	115	20	13	44	19	19
14	1	116	28	12	38	21	17
14	1	116	29	17	47	18	15
14	1	116	30	26	25	19	16
17	1	117	19	13	53	17	15
15	1	117	28	11	40	25	13
14	1	117	26	11	40	20	20
14	1	117	24	9	49	22	13
14	1	117	25	25	40	17	10
14	1	117	27	7	51	19	13
16	1	117	29	11	41	20	16
14	1	118	27	11	46	16	18
14	1	118	24	13	46	21	14
14	1	118	29	13	43	23	10
14	1	120	26	15	52	12	15
15	1	120	15	14	39	21	18
13	1	121	24	6	15	34	23
15	1	121	25	12	43	21	20
13	1	121	25	13	47	22	14
17	1	123	25	8	50	21	19
16	1	123	25	10	42	24	22
15	1	123	27	13	41	23	17
14	1	123	27	25	48	23	0
14	1	124	28	20	43	15	18
17	1	124	24	17	58	16	9
15	1	124	31	11	47	23	12
15	1	124	30	13	40	24	17
15	1	124	25	15	53	15	16
13	1	124	30	21	47	23	3
14	1	125	30	13	46	17	19
14	1	125	27	14	53	19	12
14	1	126	32	23	34	23	14
14	1	126	29	14	43	25	15
16	1	126	26	12	54	18	16
15	1	126	31	20	54	21	0
14	1	126	24	26	43	17	16
13	1	126	31	10	56	20	9
14	1	127	28	14	45	19	16
15	1	127	31	14	38	24	20
16	1	127	26	26	52	21	13
16	1	127	28	20	52	19	8
14	1	127	27	16	46	17	21
19	1	127	26	12	62	16	11

Table III. Continued.

14	1	127	27	15	45	24	16
14	1	127	28	15	40	21	23
14	1	127	32	18	49	23	5
14	1	128	24	14	51	20	19
14	1	128	26	14	49	20	19
13	1	129	20	12	52	27	18
13	1	129	25	11	54	22	17
15	1	129	22	17	45	18	16
14	1	129	23	18	56	20	12
13	1	129	32	16	42	20	19
14	1	129	31	46	45	17	20
13	1	130	27	15	50	19	19
14	1	130	32	13	49	23	13
13	1	131	28	15	57	16	15
13	1	131	20	13	55	18	15
15	1	131	23	16	53	18	21
14	1	131	26	20	46	20	19
12	1	133	31	17	47	19	19
13	1	134	32	18	51	18	15
14	1	135	27	18	49	23	18
15	1	135	27	17	54	24	13
13	1	135	31	20	47	21	16
13	1	135	27	13	52	27	17
17	1	136	31	18	50	25	12
13	1	137	31	21	40	24	21
13	1	138	36	17	40	26	19
14	1	138	27	22	45	23	21
13	1	139	31	23	51	19	7
14	1	140	31	19	47	22	21
14	1	141	29	11	56	25	20
20	1	141	30	27	41	22	21
14	1	141	30	18	50	23	20
14	1	142	32	25	48	21	16
14	1	144	24	24	53	19	24
14	1	144	32	26	38	27	21
13	1	145	28	26	25	23	23
14	1	146	33	19	53	23	18
13	1	146	28	26	55	20	17
14	1	147	28	21	56	24	18
14	1	147	34	24	42	23	24
15	1	149	32	30	55	26	6
14	1	150	23	24	60	21	22
14	1	151	33	15	60	21	22

Table III. Continued.

14	1	151	32	24	53	20	22
13	1	154	32	16	56	25	25
13	1	154	32	27	52	21	22
15	1	156	34	23	59	23	17
14	1	157	37	22	60	19	19
14	1	165	34	23	63	23	22
14	1	179	33	35	64	24	23
Totals	181	20677	4756	2551	7354	3421	2548
Possible scores		223	40	53	70	34	26
Average		112.9	25.6	13.9	30.1	18.6	13.9
Median		116	27	14.2	45	19	16
Low		50	10	0	4	0	0
High		179	36	27	36	27	25

Table III shows a variance of six years, with the largest number being fourteen years. Low total score was made by a girl thirteen years old and high score by a girl fourteen years old. The number of girls taking the test in this grade was higher than that of any other grade. The median was five points more than one half the total score.

Table IV. Grade 10.

Age	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
15	1	68	4	11	15	12	9
17	1	82	22	11	22	22	5
15	1	84	25	7	20	16	16
15	1	87	27	12	17	18	13
15	1	88	28	8	21	18	13
16	1	89	17	6	40	19	7
15	1	91	22	5	39	20	6
17	1	92	16	14	38	16	8
17	1	98	20	10	39	18	11
15	1	101	27	11	42	20	1
16	1	102	30	4	40	19	9
16	1	107	26	9	44	23	5
15	1	108	28	9	34	18	19
13	1	113	22	12	47	15	17
14	1	114	24	10	31	21	16
15	1	114	31	10	32	19	22
14	1	116	30	11	40	19	16
15	1	117	34	12	35	20	16
15	1	118	23	18	39	22	16
15	1	120	30	12	42	20	16
14	1	122	31	18	31	20	22
14	1	122	27	19	25	26	25
14	1	124	26	12	46	21	19
16	1	125	19	16	57	19	14
14	1	126	29	7	44	23	23
15	1	128	33	16	46	22	11
15	1	128	31	10	58	19	10
14	1	128	29	16	40	21	22
15	1	132	31	28	48	24	1
15	1	134	32	18	47	19	18
15	1	136	30	19	39	24	24
15	1	137	32	17	47	32	18
14	1	137	37	15	38	24	23
16	1	138	29	14	57	22	16
14	1	139	29	19	52	20	19
16	1	144	32	19	55	18	20
14	1	144	33	25	47	21	18
16	1	145	35	17	53	18	22

Table IV. Continued.

16	1	148	25	17	67	20	19
14	1	151	32	23	48	22	26
15	1	156	34	16	63	24	20
14	1	156	33	17	59	27	20
15	1	164	33	32	54	23	22
Totals	43	5174	1188	612	1798	875	673
Possible scores		223	40	53	70	34	26
Average		123.3	26.7	14.2	41.8	20.3	15.6
Median		122	31	13	44	21	16
Low		68	4	6	15	12	5
High		164	37	32	67	27	26

Table IV shows variance of five years with the low score and high score being made by a girl fifteen years old. The median was twelve points above one half the total score.

Table V. Grade 11.

Age	No.	Total score	True and False	Completion	Multiple answer	Alternate choice	Matching
16	1	75	20	9	29	8	9
17	1	79	17	7	32	15	8
17	1	85	22	4	33	19	7
16	1	92	22	8	35	16	11
15	1	94	14	4	42	20	14
18	1	96	31	12	32	21	0
16	1	97	21	11	41	16	8
17	1	100	18	6	46	18	12
15	1	103	31	12	21	23	16
18	1	105	24	4	43	16	18
15	1	114	26	16	35	20	17
16	1	117	18	11	51	21	16
16	1	119	28	9	47	19	16
15	1	120	33	16	47	20	4
18	1	121	23	8	48	24	18
17	1	121	30	11	42	25	13
17	1	123	25	9	51	24	14
15	1	125	28	18	34	22	23
16	1	126	26	12	45	25	18
15	1	134	28	19	46	20	21
15	1	134	28	14	48	23	21
16	1	134	24	21	50	22	17
16	1	139	35	12	46	23	23
20	1	156	31	21	58	25	21
Total	24	2709	603	274	1002	485	345
Possible scores		223	40	53	70	34	26
Average		112.8	25.1	11.4	41.7	20.2	14.3
Median		118	28	11	42	21	14
Low		75	14	4	21	8	0
High		156	35	21	58	25	23

A variance of five years is shown here, with low total score being made by a girl sixteen years old and high total score by a girl twenty years old. The median total score was seven points more than one half the total possible score.

Table VI. Grade 12.

Age	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
18	1	92	22	11	27	18	14
17	1	131	21	20	44	22	24
17	1	132	33	18	35	22	24
17	1	137	29	28	52	20	8
18	1	137	30	21	39	25	22
17	1	152	33	26	51	25	17
18	1	159	35	23	54	23	24
17	1	160	33	25	51	25	26
17	1	161	32	26	55	26	22
18	1	161	34	31	51	24	21
17	1	166	31	23	62	25	25
15	1	168	37	25	58	24	24
17	1	172	33	38	49	29	23
17	1	173	33	33	55	28	24
18	1	175	36	30	62	22	25
17	1	177	35	35	59	22	26
16	1	177	37	35	58	25	22
15	1	177	36	27	66	23	25
17	1	181	31	37	58	30	25
17	1	186	35	36	60	30	25
18	1	187	35	40	59	30	23
17	1	189	35	40	60	30	24
Totals	22	3550	716	628	1165	548	493
Possible scores		223	40	53	70	34	26
Average		161.3	32.5	28.5	52.9	24.9	22.4
Median		167	33	28	55	25	24
Low		92	21	11	27	18	8
High		189	37	40	66	30	26

The ages here vary from fifteen to eighteen years inclusive. The low total score was made by a girl eighteen years old and high total score by one seventeen years old. Median total score was 57 more than one half the total possible score.

Table VII. College Freshmen.

Age	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
20	1	178	38	32	60	24	24
19	1	178	37	38	66	12	25
19	1	174	33	31	60	26	24
20	1	174	32	25	62	30	23
20	1	165	33	30	60	23	19
19	1	163	36	26	54	25	22
20	1	162	35	37	44	23	23
19	1	161	35	29	52	22	23
19	1	160	33	24	60	20	23
20	1	156	31	21	58	25	21
18	1	155	27	28	52	27	21
20	1	153	29	21	59	24	20
19	1	152	36	13	54	24	25
19	1	152	33	22	47	25	25
20	1	152	35	23	52	21	21
19	1	151	33	30	46	23	19
19	1	146	35	28	29	29	25
18	1	145	26	29	52	20	18
20	1	141	27	20	52	22	20
19	1	131	33	23	37	23	15
Totals	20	3149	657	530	1056	468	436
Possible scores		223	40	53	70	34	26
Average		157	32.8	26.5	52.8	23.4	21.8
Median		155	33	28	52	24	23
Low		131	26	13	37	12	15
High		178	38	38	66	30	25

A variance of three years is shown here, with low score being made by a girl 19 and high score by a girl 20. The median for total score is 44 points more than the total possible score.

Table VIII. Girls Who Have Had Two Years Home Economics in High School. (Control Group.)

Age	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
15	1	213	38	52	66	32	25
18	1	209	34	53	66	30	25
20	1	208	34	51	68	29	26
17	1	208	38	50	64	31	25
18	1	202	36	47	64	30	25
17	1	201	37	44	65	31	24
18	1	200	35	48	62	29	26
17	1	199	36	48	63	27	25
16	1	198	35	48	64	27	24
19	1	198	38	50	65	24	21
16	1	196	37	45	60	28	26
16	1	196	36	48	60	30	22
17	1	194	38	45	56	30	25
17	1	193	33	44	61	29	26
17	1	193	39	50	49	30	25
20	1	193	37	43	53	28	22
18	1	190	33	46	63	28	20
18	1	185	34	42	59	25	25
19	1	184	36	40	57	27	24
17	1	181	27	37	56	26	25
Totals	20	4041	711	932	1221	571	486
Possible scores		223	40	53	70	34	26
Average		202.05	35.55	46.6	61	28.5	24.3
Median		197	36	47	63	29	25
Low		181	27	37	49	24	21
High		213	39	53	68	32	26

A variance of six years is shown here, with low score being made by a girl seventeen years old and high score by a girl fifteen years old. The median is 102 points more than one half the total score.

Detailed Tables of Type Tests According to Age.

Table IX. Ten Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
7	1	67	20	6	40	1	0
7	1	105	24	17	35	16	13
Totals	2	172	44	23	75	17	13
Average		86	22	11.5	37.5	8.5	6.5
Low		67	20	6	35	1	0
High		105	24	17	40	16	13
Median		86	30	11	37	7	6

Although there were only two pupils ten years old in this study it is interesting to note what their scores were. A ten year old girl in the seventh grade is probably some indication of superior ability.

Table X. Eleven Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
7	1	80	16	6	33	15	10
7	1	81	18	4	32	15	12
7	1	86	26	7	26	19	8
7	1	94	28	9	30	15	13
7	1	97	25	4	33	19	16
7	1	102	27	10	39	12	14
7	1	120	29	6	45	24	16
Totals	7	539	169	46	238	119	89
Average		77	24.1	6.6	34	17	12.7
Median		94	26	6	33	15	13
Low		80	16	4	26	12	8
High		120	29	10	45	19	16

All of this age group are in the seventh grade. It is noted that not a zero grade was made on any test.

Table XI. Twelve Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
7	1	138	28	22	49	18	21
9	1	133	31	17	47	19	19
7	1	131	23	19	48	25	16
7	1	126	24	13	53	18	18
8	1	125	30	17	40	20	18
7	1	124	31	7	51	22	13
7	1	122	23	10	51	16	18
7	1	119	24	10	51	16	18
7	1	118	23	16	46	17	16
7	1	114	25	17	36	20	16
7	1	112	17	12	44	22	17
8	1	109	30	13	38	14	14
7	1	108	29	13	41	12	13
8	1	104	28	23	22	18	13
8	1	102	26	6	42	17	11
7	1	101	23	7	34	14	13
8	1	99	25	14	27	15	18
9	1	94	23	10	36	17	8
7	1	93	23	4	35	22	9
8	1	87	25	8	32	14	8
7	1	87	27	9	21	16	14
7	1	85	24	6	25	18	12
7	1	67	21	4	22	14	6
Totals	23	2398	583	277	840	404	329
Average		104.2	25.3	12	36.5	17.5	14.2
Median		110	25	11	39	17	14
Low		67	17	4	21	12	6
High		138	31	23	53	25	21

This table shows a variance of three grades, with the highest and lowest total scores made by a pupil of the lowest grade, the seventh.

Table XII. Thirteen Years.

Grade	No.	Total score	True and False	Completion	Multiple answer	Alternate	Matching
9	1	154	32	27	52	21	22
9	1	154	32	16	56	25	25
9	1	146	28	26	55	20	17
9	1	145	28	26	25	23	23
9	1	139	31	23	57	19	7
9	1	138	36	17	40	26	19
9	1	137	31	21	40	24	21
9	1	136	27	13	52	27	17
9	1	135	31	20	47	21	16
9	1	134	32	18	51	18	15
9	1	131	20	13	55	18	15
9	1	131	28	15	57	16	15
9	1	130	27	15	50	19	19
9	1	129	32	16	42	20	19
9	1	129	25	11	54	22	17
9	1	129	20	12	52	27	18
9	1	126	31	10	56	20	9
9	1	124	30	21	47	23	3
9	1	121	25	13	47	22	14
9	1	121	24	6	15	34	23
8	1	121	32	15	42	19	20
8	1	116	24	8	42	17	18
8	1	115	24	9	47	16	19
9	1	114	26	12	40	18	18
9	1	113	22	12	47	15	17
9	1	109	29	5	38	19	18
9	1	109	24	16	36	23	20
9	1	109	27	14	32	24	12
7	1	109	25	14	32	20	18
7	1	109	24	23	35	15	12
7	1	107	21	11	39	24	12
8	1	106	28	17	35	23	3
9	1	102	28	14	24	19	17
9	1	101	26	5	40	20	10
9	1	99	28	11	41	12	7
9	1	99	12	12	39	25	11
9	1	95	27	12	19	19	18
9	1	93	26	11	29	16	11
8	1	90	24	8	48	10	0
9	1	89	21	5	39	11	13
9	1	88	19	0	45	17	7

Table XII. Continued.

7	1	80	21	6	46	17	7
7	1	70	23	5	26	11	5
7	1	69	21	6	23	15	4
7	1	67	21	4	22	14	6
9	1	62	12	7	17	12	14
9	1	50	10	1	28	11	0
7	1	41	8	4	19	6	4
Totals	48	5321	1176	620	1900	893	648
Average		110.7	24.5	12.9	39.5	18.6	13.5
Median		113	26	12	40	19	15
Low		41	8	0	17	3	0
High		154	36	27	57	34	25

A variance of three grades is shown in this table, with the highest and lowest total scores being made by a pupil of the seventh grade.

Table XIII. Fourteen Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
9	1	179	33	35	64	24	23
9	1	165	34	23	63	23	22
9	1	157	37	22	60	19	19
10	1	156	33	17	59	27	20
9	1	151	32	24	53	20	22
9	1	151	33	15	60	21	22
10	1	151	32	23	48	22	26
9	1	150	23	24	60	21	22
9	1	147	34	24	42	23	24
9	1	147	28	21	56	24	18
9	1	146	33	19	53	23	18
10	1	144	23	25	47	21	18
9	1	144	32	26	38	27	21
9	1	144	24	24	53	19	24
9	1	142	32	25	48	21	16
9	1	141	30	18	50	23	20
9	1	141	29	11	56	25	20
9	1	140	31	19	47	22	21
10	1	139	29	19	52	20	19
9	1	138	27	22	45	23	21
10	1	137	37	15	38	24	23
9	1	135	27	18	49	23	18
9	1	133	28	20	46	20	19
9	1	130	32	13	49	23	13
9	1	129	31	16	45	17	20
9	1	129	23	18	56	20	12
9	1	128	26	14	49	20	19
9	1	128	24	14	51	20	19
10	1	128	29	16	40	21	22
9	1	127	32	18	49	23	5
9	1	127	28	15	40	21	23
9	1	127	27	15	45	24	16
9	1	127	27	16	46	17	21
9	1	127	28	14	45	19	16
10	1	126	29	7	44	23	23
9	1	126	24	26	43	17	16
9	1	126	29	14	43	25	15
9	1	126	32	23	34	23	14
9	1	125	27	14	53	19	12
9	1	125	30	13	46	17	19
9	1	124	28	20	43	15	18
10	1	124	26	12	46	21	19
9	1	123	27	25	48	23	0

Table XIII. Continued.

10	1	122	27	19	25	26	25
10	1	122	31	18	31	20	22
9	1	120	26	15	52	12	15
9	1	118	29	13	43	23	10
9	1	118	24	13	46	21	14
9	1	118	27	11	46	16	18
9	1	117	27	7	51	19	13
9	1	117	25	25	40	17	10
9	1	117	24	9	49	22	13
9	1	117	26	11	40	20	20
9	1	116	30	26	25	19	16
9	1	116	29	17	47	18	15
9	1	116	28	12	38	21	17
10	1	116	30	11	40	19	16
10	1	114	24	10	31	21	16
9	1	113	27	10	35	26	15
9	1	112	17	17	50	17	11
8	1	112	29	14	36	13	20
9	1	111	26	13	49	11	12
9	1	111	27	4	43	18	19
9	1	110	23	13	27	26	21
9	1	109	20	21	41	22	15
9	1	109	24	11	36	22	16
9	1	109	16	13	47	14	19
9	1	108	23	6	44	22	13
8	1	108	28	19	41	18	2
9	1	107	28	9	39	21	10
9	1	107	29	13	30	20	15
9	1	106	25	18	30	14	19
9	1	104	30	11	31	19	13
9	1	103	26	11	41	11	14
9	1	103	25	10	45	17	6
9	1	102	25	11	26	20	20
9	1	101	29	18	24	18	12
9	1	99	27	21	44	7	0
8	1	99	23	9	28	24	15
8	1	99	32	9	32	17	9
9	1	97	21	13	35	17	11
9	1	97	28	13	27	18	11
9	1	97	27	4	48	14	4
9	1	96	14	6	39	19	18
9	1	96	14	6	39	19	18
9	1	94	28	11	52	3	0
9	1	94	31	8	21	18	13
9	1	92	25	9	21	23	14
9	1	91	25	12	21	18	15

Table XIII. Continued.

9	1	89	27	7	24	20	11
9	1	87	23	11	23	17	13
9	1	87	27	9	19	19	13
8	1	86	29	13	20	19	5
9	1	85	27	20	15	18	5
9	1	84	31	8	21	18	6
9	1	83	20	4	40	13	6
9	1	80	19	14	22	13	12
8	1	74	21	11	22	16	4
9	1	71	15	10	17	15	14
9	1	70	28	9	24	9	0
9	1	69	28	5	24	10	2
9	1	68	25	8	35	0	0
9	1	65	15	15	18	11	6
8	1	61	22	2	31	6	0
9	1	59	14	6	20	10	9
9	1	58	27	1	12	15	3
9	1	54	17	6	4	17	10
9	1	54	20	0	22	8	4
Totals	107	12158	2860	1556	4214	1998	1543
Average		113.6	26.7	14.5	39.3	18.6	14.4
Median		116	27	13	40	19	15
Low		54	14	0	4	3	0
High		179	37	35	64	27	26

A variance of three grades is shown in this table with the highest and lowest score being made by a pupil of the ninth grade.

Table XIV. Fifteen Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
10	1	164	33	32	54	23	22
10	1	156	34	16	63	24	20
9	1	156	34	23	59	23	17
9	1	149	32	30	53	26	6
10	1	136	30	19	39	24	24
9	1	135	27	17	54	24	13
10	1	134	32	18	47	19	18
11	1	134	28	19	46	20	21
11	1	134	28	14	48	23	21
10	1	132	31	28	48	24	1
9	1	131	23	16	53	18	21
9	1	129	22	17	45	18	16
10	1	128	31	10	58	19	10
10	1	128	33	16	46	22	11
9	1	127	31	14	38	24	20
9	1	126	31	20	54	21	0
11	1	125	28	18	34	22	23
9	1	124	25	15	53	15	16
9	1	124	30	13	40	24	17
9	1	124	31	11	47	23	12
9	1	123	29	13	41	23	17
9	1	121	25	12	43	21	20
9	1	120	15	14	39	21	18
10	1	120	30	12	42	20	16
11	1	120	33	16	47	20	4
10	1	118	23	18	39	22	16
9	1	117	28	11	40	25	13
10	1	117	37	12	35	20	16
9	1	115	20	13	44	19	19
10	1	114	31	10	32	19	22
11	1	114	26	16	35	20	17
9	1	107	25	20	21	21	20
9	1	107	27	12	27	17	24
9	1	107	27	12	27	17	24
10	1	107	26	9	44	23	5
9	1	106	28	11	43	9	15
9	1	105	25	6	40	18	16
9	1	104	30	7	47	20	0
11	1	103	31	12	21	23	16
9	1	103	27	13	34	15	14
9	1	103	24	14	46	13	6
9	1	101	16	14	55	16	0

Table XIV. Fifteen Years.

9	1	101	24	9	39	18	11
10	1	101	27	11	42	20	1
9	1	100	23	8	41	17	11
9	1	99	24	11	22	15	17
8	1	98	23	12	41	22	0
9	1	97	22	11	26	22	16
11	1	94	14	4	42	20	14
9	1	94	29	7	44	19	15
10	1	91	22	5	39	20	6
9	1	89	27	12	19	19	12
9	1	89	25	6	34	15	9
8	1	88	30	13	20	18	7
10	1	88	28	8	21	18	13
10	1	87	27	12	17	18	13
10	1	84	25	7	20	16	16
9	1	82	27	7	17	14	17
8	1	80	24	7	27	18	4
9	1	77	26	9	20	12	10
9	1	75	18	3	34	9	11
10	1	68	4	11	15	12	9
9	1	66	12	11	22	13	8
9	1	62	20	9	21	12	0
8	1	44	17	9	16	2	0
Totals	64	6995	1668	833	2433	1210	823
Average		109.3	26	13	38	18.9	12.8
Median		107	26	12	39	19	14
Low		44	4	3	16	2	0
High		164	37	32	63	24	24

A variance of four grades is shown in this table with lowest grade made by an eighth grade student and highest by a tenth grade student.

Table XV. Sixteen Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
11	1	75	20	9	29	8	9
9	1	86	29	11	40	0	0
9	1	88	31	9	21	15	12
10	1	89	17	6	40	19	7
9	1	92	25	11	32	18	6
11	1	92	22	8	35	16	11
9	1	94	24	8	28	17	7
11	1	97	21	11	41	16	8
9	1	99	27	12	32	17	11
9	1	100	26	18	21	18	17
9	1	101	27	6	37	19	10
9	1	102	29	11	28	21	14
10	1	102	30	4	40	19	9
9	1	106	27	8	45	21	5
9	1	108	24	9	49	16	10
10	1	108	28	9	34	18	19
9	1	117	29	11	41	20	16
11	1	117	18	11	51	21	16
11	1	119	28	9	47	19	16
9	1	123	25	10	42	24	22
10	1	125	19	16	57	19	14
9	1	126	26	12	54	18	16
11	1	126	26	12	45	25	18
9	1	127	26	26	52	21	13
9	1	127	28	20	52	19	8
11	1	134	24	21	50	22	17
10	1	137	32	17	47	23	18
10	1	138	29	14	57	22	16
11	1	139	35	12	46	23	23
10	1	144	32	19	55	18	20
10	1	145	35	17	53	18	22
10	1	148	25	17	67	20	19
Totals	32	3651	844	400	1368	590	429
Average		114	26.3	15.6	42.6	18.4	13.4
Median			27	11	42	19	13
Low		75	17	4	21	0	0
High		148	35	26	67	25	23

A variance of three grades is shown in this table with lowest grade made by a student of the eleventh grade and highest grade by a student of the tenth grade.

Table XVI. Seventeen Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
11	1	79	17	7	32	15	8
9	1	82	22	11	22	22	5
11	1	85	22	4	33	19	7
9	1	92	16	14	38	16	8
9	1	98	20	10	39	18	11
11	1	100	18	6	46	18	12
9	1	117	19	13	53	17	15
11	1	121	30	11	42	25	13
9	1	123	25	8	50	21	19
11	1	123	25	9	51	24	14
9	1	124	24	17	58	16	9
12	1	131	21	20	44	22	24
12	1	132	33	18	35	22	24
9	1	136	31	18	50	25	12
12	1	137	29	28	52	20	28
12	1	160	33	25	51	25	26
12	1	161	32	26	55	26	22
12	1	161	34	36	51	24	21
12	1	166	31	23	62	25	25
12	1	168	37	25	58	24	24
12	1	172	33	38	49	29	23
12	1	173	33	33	55	28	24
12	1	181	31	37	58	30	25
12	1	186	35	36	60	30	25
12	1	189	35	40	60	30	24
Totals	25	3397	686	508	1204	511	448
Average		135.8	27.4	20.3	48.1	20.4	17.9
Median		132	31	18	51	24	21
Low		79	16	4	22	15	5
High		189	37	40	62	30	28

Table XVI shows a variance of three grades not including the tenth grade. The lowest grade was made by a student of the eleventh grade and the highest grade by a student of the twelfth grade.

Table XVII. Eighteen Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
9	1	92	20	9	37	17	9
9	1	94	26	5	37	17	9
11	1	121	23	8	48	24	18
11	1	105	24	4	43	16	18
11	1	96	31	12	32	21	0
12	1	187	35	40	59	30	23
12	1	175	36	30	62	22	25
12	1	159	35	23	54	23	24
12	1	152	33	26	51	25	17
12	1	137	30	21	39	25	22
12	1	92	22	11	27	18	14
College	1	145	26	29	52	20	18
College	1	155	27	28	52	27	21
Totals	13	1710	368	246	593	285	218
Average		131.5	28.3	18.9	45.6	21.9	16.7
Median		140	27	22	48	22	18
Low		92	22	4	27	16	0
High		187	36	40	62	30	35

A variance of four grades is shown in this table. Low score was made by a student of the ninth grade and high score by a college student.

Table XVIII. Nineteen Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
9	1	127	26	12	62	16	11
College	1	174	33	31	60	26	24
College	1	160	33	24	60	20	23
College	1	161	35	29	52	22	23
College	1	163	36	26	54	25	22
College	1	127	26	12	62	16	11
College	1	131	33	23	37	23	15
College	1	151	33	30	46	23	19
College	1	178	37	38	66	12	25
College	1	152	36	13	54	24	25
College	1	146	35	28	29	29	25
College	1	152	33	22	47	25	25
Totals	12	1822	396	288	629	261	248
Average		151.8	33	24	52.4	21.7	20.6
Median		129	33	25	54	23	23
Low		127	26	12	29	12	11
High		152	37	38	66	29	25

All students here were college freshmen but one, who was in the ninth grade, which no doubt is indicative that she is a poor student.

Table XIX. Twenty Years.

Grade	No.	Total score	True and false	Completion	Multiple answer	Alternate choice	Matching
9	1	141	30	27	41	22	21
11	1	156	31	21	58	25	21
College	1	153	29	21	59	24	20
College	1	162	35	37	44	23	23
College	1	152	35	23	52	21	21
College	1	178	38	32	60	24	24
College	1	165	33	30	60	23	19
College	1	141	27	20	52	22	20
College	1	174	32	25	62	30	23
Totals	9	1422	290	236	488	214	192
Average		158	32.2	26.2	54.2	23.7	21.3
Median		155	31	24	58	23	21
Low		141	27	20	41	21	19
High		178	38	37	62	25	24

The majority here were college girls and the scores ran comparatively high. No doubt the two girls not in college have less ability than the average girl.

Table XX. Summary of Total Scores According to Grades.

Total	Class	Average score	Median	Low	High	Possible
31	7	99.09	101	41	138	223
22	8	96.5	99	44	125	223
183	9	112.9	116	50	179	223
43	10	123.3	122	68	164	223
24	11	112.8	118	75	156	223
22	12	161.3	167	92	189	223
20	College	157	155	131	178	223
20	Had home economics	202.5	197	181	213	223

Table XX shows that the eighth grade was lowest in average, median, and high score. The lowest score for girls who had had home economics (control group) was higher than all high scores except that of the college girls, but the median for the same group was higher than any high score. The low scores ran true to grade with the seventh grade having the lowest. This was the only division in which that occurred.

Table XXI. Summary of Total Scores of True and False Tests According to Grade.

Class	Average score	Median	Low	High	Possible
7	23.2	23	8	29	40
8	26	27	17	32	40
9	25.6	27	10	36	40
10	26.7	31	4	37	40
11	25.1	28	14	35	40
12	32.5	33	21	37	40
College	32.8	33	26	38	40
Had home economics	35.5	36	27	39	40

The college group was only a fraction above the twelfth grade, with an exact median and only a difference of one in the high score. The tenth grade had the lowest score made, but ranked even with the twelfth grade in high score.

Table XXII. Summary of Total Scores of Completion Test According to Grade.

Class	Average score	Median	Low	High	Possible
7	6.7	7	4	19	53
8	11.6	12	2	19	53
9	13.9	14	0	27	53
10	14.2	13	6	32	53
11	11.4	11	4	21	53
12	28.5	28	11	40	53
College	26.5	28	13	38	53
Had home economics	46.6	47	37	53	53

The average score here ran very low. No group except the group who had had home economics (control group) answered but slightly more than half the points. The control group had for its high score the possible score, and its low score was just three lower than the high score of any group. The ninth grade had zero for its low score, but a high score was one half the possible points. Not considering the group which had had home economics, the twelfth grade had the highest average score and also the highest score.

Table XXIII. Summary of Total Scores of Multiple Answer Test According to Grade.

Class	Average score	Median	Low	High	Possible
7	37.0	36	19	53	70
8	33.1	33	16	48	70
9	30.1	45	4	36	70
10	41.8	44	15	67	70
11	41.7	42	21	58	70
12	52.9	55	27	66	70
College	52.8	52	37	66	70
Had home economics	61.0	63	49	68	70

The average score here was lowest for the ninth grade, which also had the low score with their highest score being just six points higher than their lowest score. The median of the ninth grade was fourth to high.

Table XXIV. Summary of Total Scores of Alternate Choice Test According to Grade.

Class	Average score	Median	Low	High	Possible
7	16.09	17	1	25	36
8	16.1	18	2	24	34
9	18.6	19	0	27	34
10	20.3	21	12	27	34
11	20.2	21	8	25	34
12	24.9	25	18	30	34
College	23.4	24	12	30	34
Had home economics	28.5	29	24	32	34

The average scores in this table ran practically in sequence except that the college girls were lower than the twelfth grade girls. The ninth grade had zero for lowest score. The lowest score of the control group was higher than all average scores except the twelfth grade which was .9 of a point higher.

Table XXV. Summary of Total Scores of Matching Test According to Grade.

Class	Average score	Median	Low	High	Possible
7	12.3	13	0	21	26
8	9	7	0	20	26
9	13.9	16	0	25	26
10	15.6	16	5	26	26
11	14.3	14	0	23	26
12	22.4	24	8	26	26
College	21.8	23	15	25	26
Had home economics	24.3	25	21	26	26

A zero score for lowest score was made by the seventh, eighth, ninth, and eleventh grades, while no girl in the control group had a score lower than twenty-one.

Table XXVI. Summary of Total Scores According to Age.

Total	Age	Average score	Median	Low	High	Possible
2	10	86	86	67	105	223
7	11	77	94	80	120	223
23	12	104.2	110	67	138	223
48	13	110.7	113	41	154	223
107	14	113.6	116	54	179	223
64	15	109.3	107	44	164	223
32	16	114	112	75	148	223
25	17	135.8	132	79	189	223
13	18	131.5	140	92	187	223
12	19	151.8	129	129	152	223
9	20	158	155	141	178	223
20	Had home economics	202.5	197	181	213	223

This table shows that the eleven year old was lowest in average score, but the ten year old had the lowest median. The median score for the control group was higher than the high score of any other group.

Table XXVII. Summary of Total Scores of True and False Test According to Age.

Age	Average score	Median	Low	High	Possible
10	22	30	20	24	40
11	24.1	26	16	29	40
12	25.3	25	17	31	40
13	24.5	26	8	36	40
14	26.7	27	14	37	40
15	26.0	26	4	37	40
16	26.3	27	17	35	40
17	27.4	31	16	37	40
18	28.3	27	22	36	40
19	33.0	33	26	37	40
20	32.2	31	27	38	40
Had home economics	35.5	36	27	39	40

The median and average score here was highest for the eighteen year old group. The scores ran comparatively high in all cases.

Table XVIII. Summary of Total Scores of Completion Test According to Age.

Age	Average score	Median	Low	High	Possible
10	11.5	11	6	17	53
11	6.6	6	4	10	53
12	12.0	11	4	23	53
13	12.9	12	0	27	53
14	14.5	13	0	35	53
15	13.0	12	3	32	53
16	15.6	11	4	26	53
17	20.3	18	4	40	53
18	18.9	22	4	40	53
19	24.0	25	12	38	53
20	26.2	24	20	37	53
Had home economics	46.6	47	37	53	53

In no case did the girls know one half the information except in the control group. The scores for this test ran lower than any other test. This may be due to the type of test or it may be that the test was poorly made.

Table XXIX. Summary of Total Scores of Multiple Answer Test According to Age.

Age	Average score	Median	Low	High	Possible
10	37.5	37	35	40	70
11	34.0	33	26	45	70
12	36.5	39	21	53	70
13	39.5	40	17	57	70
14	39.3	40	4	64	70
15	38.0	39	16	63	70
16	42.6	42	21	67	70
17	48.1	51	22	62	70
18	45.6	48	27	62	70
19	52.4	54	29	66	70
20	54.2	58	41	60	70
Had home economics	61.0	63	49	68	70

The fourteen year old girl had the lowest low score here and the fifteen year old the highest high score. The median for the control group was higher in all cases but three of the high scores, and tied in one case. The highest average score was just 6.8 points below the average score for the control group.

Table XXX. Summary of Total Scores of Alternate Choice Test According to Age.

Age	Average score	Median	Low	High	Possible
10	8.5	7	1	16	34
11	17.0	15	12	19	34
12	17.5	17	12	25	34
13	18.6	19	3	34	34
14	18.6	19	3	27	34
15	18.9	19	2	26	34
16	18.4	19	0	25	34
17	20.4	24	15	30	34
18	21.9	22	16	30	34
19	21.7	23	12	29	34
20	23.7	23	21	25	34
Had home economics	28.5	29	24	32	34

The medians here ran comparatively close in a large number of years, the increase being an increase with years except with the 17 year old girls who had the highest median, being just five points below the control group.

Table XXXI. Summary of Total Scores of Matching Test According to Age.

Age	Average score	Median	Low	High	Possible
10	6.5	6	0	13	26
11	12.7	13	8	16	26
12	14.2	14	6	21	26
13	13.5	15	0	25	26
14	14.4	15	0	26	26
15	12.8	14	0	24	26
16	13.4	13	0	23	26
17	17.9	21	5	26	26
18	16.7	18	0	25	26
19	20.6	23	11	25	26
20	21.3	21	19	24	26
Had home economics	24.3	25	21	26	26

This table shows a perfect score made for high score by the fourteen year old, the eleven year old, and the control group. The median for the control group was just one point below the possible score. There was a minus score for low score in more than half the groups. This may be due to time, since this test was the last in the set.

Table XXXII. Summary of Type Tests According to Grades.

Class	True and false	Completion	Multiple answer	Alternate choice	Matching	Total
7	58.2	19.1	50.4	46.4	42.7	43.3
8	64.2	22.5	47.0	46.7	33.2	42.7
9	48.2	17.9	36.5	39.0	35.7	35.4
10	70.1	27.2	55.9	58.3	55.5	53.4
11	62.6	23.5	59.8	60.0	51.5	70.6
12	81.0	52.8	67.0	70.1	82.5	70.6
College	81.7	55.3	76.4	69.7	85.5	73.7
Average	66.5	31.1	56.0	55.7	55.2	52.9
Had home economics	87.1	89.0	85.6	86.1	93.1	88.1

Table XXXII shows the percentage for the completion test was lower in every group but the control group, where it ranked higher than all other tests but matching. There was a difference in average percentage scores and the percentage score of the control group of more than thirty per cent in all cases except in the true and false test, where it was just 20.6 per cent less.

Table XXXIII. Summary of Type Tests According to Age.

Age	True and false	Completion	Multiple answer	Alternate choice	Matching	Total
10	55.1	20.6	51.0	25.0	22.9	37.0
11	59.5	16.2	51.0	50.3	42.6	43.9
12	62.9	23.6	57.6	62.2	53.5	51.9
13	60.4	22.5	56.3	63.8	51.1	50.8
14	60.5	24.0	52.5	61.8	57.9	51.3
15	66.3	21.8	58.4	60.3	57.3	52.8
16	59.2	21.6	60.6	63.1	40.6	49.0
17	59.5	34.3	64.0	57.8	51.1	53.3
18	66.5	38.2	62.3	68.3	72.5	61.5
19	66.0	44.4	59.4	64.0	73.8	61.5
20	71.7	50.9	74.2	65.5	72.8	67.0
Average	62.1	28.9	58.8	58.3	54.1	52.7
Had home economics	87.1	89.0	85.6	86.1	93.1	88.1

In table XXXIII the percentage for the completion test was lowest in all cases but for the control group, where it ranked next to highest. The matching test ranked highest in the control group. The fifteen year old group seemed to do better in most cases than the sixteen year old group.

Table XXXIV. Summary of Subject Matter According to Grade.

	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	College	Average	Had home economics
Clothing	34.6	39.9	32.4	48.5	45.8	68.9	70.7	48.6	87.8
Foods	44.2	43.1	34.8	54.0	50.9	70.6	72.2	52.8	84.5
Home Management and Family Re- lationship	48.7	42.3	41.3	58.3	54.5	69.8	77.6	56.0	88.6
Child Care	62.7	47.4	42.0	62.8	55.8	78.7	73.8	60.4	87.0
Health and Home Care of the Sick	37.1	52.2	37.4	59.3	53.8	72.2	72.5	54.9	88.0

Table XXXIV shows that in all cases except that of child care the control group knew over thirty per cent more than the average of any other group. The eleventh grade knew less than the tenth grade in each case, but from the eleventh grade on there is a steady increase.

Table XXXV. Summary of Subject Matter According to Age.

Years	Clothing	Foods	Home Management and Family Relationship	Child Care	Health and Home Care of the Sick
10	32.3	29.6	35.5	44.3	31.2
11	41.3	42.7	53.0	66.0	41.2
12	43.2	50.2	54.2	58.8	46.7
13	43.1	48.0	53.9	55.6	50.6
14	45.2	50.5	55.0	49.8	55.2
15	46.2	51.5	58.5	60.2	34.3
16	46.7	45.5	50.0	52.0	44.0
17	50.4	50.2	54.2	45.8	40.3
18	60.1	60.2	60.2	60.5	64.7
19	58.2	60.8	65.3	67.0	63.7
20	63.8	65.6	70.2	74.7	67.7
Average	48.2	49.5	55.6	57.9	49.0
Had home economics	87.8	84.5	88.6	87.0	88.0

The eighteen year old group appeared to know about the same percentage of material in all divisions. The twenty year old group knew more than any other age group. The average amount known by all age groups in all divisions was more than thirty per cent less than the control group in all divisions.

Table XXXVI. Analysis of Subject Matter in Foods and Clothing According to Grade.

Grade	Cookery	Nutrition	Clothing Selection and Care	Clothing Construction
7	44.0	49.5	42.2	49.2
8	44.6	59.6	32.1	38.2
9	32.4	43.0	30.8	33.1
10	50.9	64.5	46.4	41.8
11	52.3	40.4	43.4	46.9
12	66.9	77.0	75.0	69.9
College	61.5	76.1	54.5	86.5
Average	50.3	58.8	46.3	52.2
Had home economics	90.3	87.0	80.3	88.7

This table shows that in practically all cases more pupils have knowledge in nutrition than in cookery. Pupils also have more knowledge of clothing construction than in clothing selection and care. The twelfth grade and the college girl had the highest percentage in all divisions, with the twelfth grade being highest in all but clothing construction.

Table XXXVII. Analysis of Subject Matter in Foods and Clothing According to Age.

Age	Cookery	Nutrition	Clothing Selection and Care	Clothing Construction
10	26.6	49.3	32.4	31.8
11	43.1	35.8	42.5	51.7
12	43.7	41.1	46.5	59.6
13	44.8	41.1	43.7	57.8
14	44.0	44.7	43.8	61.3
15	46.9	44.0	46.4	60.4
16	46.3	43.2	41.4	55.7
17	46.8	43.8	44.0	46.5
18	60.7	56.7	56.2	70.1
19	56.1	63.4	57.4	67.4
20	61.1	68.6	58.4	73.8
Average	47.1	46.5	46.6	57.8
Had home economics	90.3	87.0	80.3	88.7

This table shows the twenty year old group has the highest percentage in all divisions, but since the number of girls twenty years old was small the percentages are probably not comparable to the others except the ten year old group. No group under seventeen years knew fifty per cent of the subject matter except in clothing construction, where all groups but the ten and seventeen year groups knew more than fifty per cent of the subject matter.

Table XXXVIII. Comparison of Table XXXVI with Other Divisions of Home Economics According to Grade.

Grade	Cookery	Nutrition	Clothing Selection and Care	Clothing Construction	Home management and Family Relationship	Child Care	Health and Home Care of the Sick
7	44.0	49.5	42.2	49.2	48.7	62.7	37.1
8	44.6	59.6	32.1	38.2	42.3	47.4	52.2
9	32.4	43.0	30.8	33.1	41.3	42.0	37.4
10	50.9	64.5	46.4	41.8	58.3	62.8	59.3
11	52.3	40.4	43.4	46.9	54.5	55.8	53.8
12	66.9	77.0	75.0	69.9	69.8	78.7	72.6
College	61.5	76.1	54.5	86.5	77.6	73.8	72.5
Average	50.3	58.8	46.3	52.2	56.0	60.4	54.9
Had home economics	90.3	87.0	80.3	88.7	88.6	87.0	88.0

Table XXXVIII shows the twelfth grade girl ranking first in all cases but in clothing construction and in home management and family relationships. The twelfth grade girls knew more than the eighth grade girls except for nutrition and health and home care of the sick. The ninth grade knew less than forty-five per cent of the subject matter in any division. Since this group was much larger than any other, the results may be more generally typical. In each case the control group was twenty-five per cent or more above any other group.

Table XXXIX shows that the control group was thirty per cent or more higher in all cases than the average of any other group. Clothing construction had the highest percentage average in seven groups; child care in three groups; cookery, home management and family relationship, and nutrition in one group each.

Table XXXIX. Comparison of Table XXXVII with Other Divisions of Home Economics According to Age.

Age	Cookery	Nutrition	Clothing Selection and Care	Clothing Construction	Home management and Family Relationship	Child Care	Health and Home Care of the Sick
10	26.6	49.3	32.4	31.8	35.5	44.3	31.2
11	43.1	35.8	42.5	51.7	53.0	66.0	41.2
12	43.7	41.1	46.5	59.6	54.2	58.8	46.7
13	44.8	41.1	43.7	57.8	53.9	55.6	50.6
14	44.0	44.7	43.8	61.3	55.0	49.8	55.2
15	46.9	44.0	46.4	60.4	58.5	60.2	34.3
16	46.3	43.2	41.4	55.7	52.0	52.0	44.0
17	46.8	43.8	44.0	46.5	54.2	45.8	40.3
18	60.7	56.7	56.2	70.1	60.2	60.5	64.7
19	56.1	63.4	57.4	67.4	65.3	67.0	63.7
20	61.1	68.6	58.4	73.8	70.2	74.7	67.7
Average	47.1	46.5	46.6	57.8	55.6	57.9	49.0
Had home economics	90.3	87.0	80.3	88.7	88.6	87.0	88.0

CONCLUSIONS

1. The girl in high school and college who has had no school work in home economics knows some subject matter in home economics. The amount appears to be greater than home economics teachers generally recognize or admit.

2. The home economics teacher in many instances is no doubt teaching subject matter already known to the pupils.

3. The subject matter which the girls knew in the various divisions of home economics showed a small percentage variation.

4. The true and false test had the highest percentage of correct answers, and the completion the lowest. This may be due in part to subject matter covered by the tests and to the person's ability in making tests.

5. Girls who have had home economics in high school know much more subject matter in home economics than girls who have not had the subject. In every comparison except one the control group knew thirty per cent or more more than any other group.

6. The results and findings of the ninth grade are probably more typical than are the others. This is due to the larger number of schools and pupils represented.

7. The difficulty encountered in securing twenty twelfth grade and twenty college freshman girls who had had no home

economics whatever in school indicates that a large number of schools are including home economics courses in their curricula.

8. The home economics teacher must recognize that the home and other agencies have taught the girl some subject matter in home economics.

9. The home economics teacher should pre-test her pupils at the beginning of each course and then plan the course in keeping with her findings.

10. Further data on this subject would be helpful, and a study of skills and techniques with corresponding groups is needed.

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